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EXAMINER
NGUYEN, KHAI N

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NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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DETAILED ACTION

1.   In view of the Appeal Brief filed on January 16, 2009, PROSECUTION IS

HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the

following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply

under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed

by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and

appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth

in 37 CFR 41.20 have been increased since they were previously paid, then appellant

must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by

signing below:

2.   The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

Claim Rejections - 35 USC § 112

3.   Claims 1, 6-8, 11, 18-19, 22-23, and 25 are rejected under 35 U.S.C. 112,

second paragraph, as being vague and indefinite for failing to particularly point out and

distinctly claim the subject matter which applicant regards as the invention.

         In claims 1, 6-8, 11, 18-19, 22-23, and 25, it is unclear as to what is meant by

"association" as recited in the claims. Appropriate correction is required.

Claim Rejections - 35 USC § 101

4.   Claims 1-19 are rejected under 35 U.S.C. 101 as not falling within one of the four

statutory categories of invention.   Supreme Court precedent[1] and recent Federal Circuit

decisions (*In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008)) indicate that a statutory

"process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a

particular apparatus), or (2) transform underlying subject matter (such as an article or

material) to a different state or thing. While the instant claim(s) recite a series of steps

or acts to be performed, the claim(s) neither transform underlying subject matter nor

positively tie to another statutory category that accomplishes the claimed method steps,

and therefore do not qualify as a statutory process.

         For example, claims 1 appears to have a mere manipulation of data (receiving,

queuing, controlling, initiating), and does not have any tangible, useful and concrete

result.   Receiving "a failure message from a remote process", queuing "data messages

destined for that remote process", controlling "an acknowledgment of the failure

message", and initiating "a traffic diversion to set up an alternate path" can be done by

an agent/person (someone looking at the monitor that displays data/information and

performs the traffic diversion). Although the preamble recites a "processing entity" but

this processing entity can be equated to an agent/person. Applicants have provided no

explicit and deliberate definitions of "receiving", "queuing" , "controlling" or "initiating" to

limit the steps to the electronic form of the "failure message". No practical application is

provided, since all of the recited steps can be performed in the mind of a user/person or

by the use of a pencil and paper.

5.   Claims 20 and 21 are rejected under 35 U.S.C. 101 because the claimed

invention is directed to non-statutory subject matter.

       Claim 20 recites "a computer readable storage medium embedded with computer

code", and claim 21 recites "- - - using a computer program code - - -". And therefore

these claims did not fall within at least one of the four enumerated categories of

patentable subject matter recited in section 101 (i.e., process, machine, manufacture, or

composition of matter). Claim 20 is drawn toward a computer readable storage

medium, and claim 20 failed to describe that the program code is **executed** by a

computer to perform the described method; as a result the medium is just code or

instructions and therefore fails to fall within a statutory category under § 101. See

MPEP § 2106.IV.B.1.a. Instructions not claimed as being executed by a computer are

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[1] *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk*

descriptive material *per se* and are not statutory because they are not capable of

causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31

USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). In contrast, a

claimed instructions executed by a computer define structural and functional

interrelationships between the instructions and the computer software and hardware

components which permit the instructions' functionality to be realized, and is thus

statutory. Software instructions or code, or a mere program listing are nonstatutory

subject matter. Logic, or software, or any type of "functional descriptive material", is not

statutory when claimed as descriptive material, per se. See MPEP 2106 Patent Subject

Matter Eligibility, MPEP 2106.01 Computer-Related Nonstatutory Subject Matter, and

see pages 50-57 of "Interim Guidelines for Examination of Patent Applications for

Patent Subject Matter Eligibility".

Claim Rejections - 35 USC § 103

6.   Claims 1-8 and 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Roque et al. (U.S. Publication 2002/0186687 A1 hereinafter "Roque") in view of

Thompson et al. (U.S. Publication 2002/0018462 A1 hereinafter "Thompson").

        Regarding claims 1-3, Roque teaches a method of controlling a local process that

forms part of a first processing entity (Fig. 3, 121-122 "ASP"), said first processing entity

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v. Benson, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

maintaining a plurality of associations with a plurality of remote processes in a second

processing entity (Fig. 3, 131-132 "GSP"), said method comprising the steps of:

  - receiving a failure message from a remote process (Fig. 6, 30-2

SGPIA/SGPDOWN) indicating a fault affecting an association linking the local process

(Fig. 6, ASP-X) with that remote process (Figs. 6-12, paragraphs [0335]-[0336]

hereinafter "par", i.e., remote process "SGP-A' sends an SGPDOWN "failure" message);

  - queuing data messages destined for that remote process (Figs. 6-12, par [0385],

i.e., stop signaling traffic messages);

  - controlling the transmission of an acknowledgement (Figs. 6-12, SGPIA-

ACK/SGPDOWN-ACK) of the failure message (Fig. 10, par [0372], i.e., a

"communication down indication") so that the data messages pending on the

association are received at that remote process (Figs. 6-12, par [0355]); and

  - initiating a traffic diversion to set up an alternate path between said first processing

entity and said second processing entity for queued data messages (Figs. 6-12 "SGPIA

or SGPDOWN is received", par [0350]-[0354], i.e., either use an alternate SGP that is

active or start an activation procedure).

      However, Roque does not explicitly disclose controlling the delayed

acknowledgement of the failure message with the delay that can be set with a

predeterminable time period, so that the data messages pending on the association are

received at that remote process before the acknowledgment of the failure message.

In the same field of endeavor, Thompson teaches when receiving a failure message (Thompson – Fig. 10, par [0019], lines 5-17, i.e., informs "failure message" that no longer going to monitor a communication channel), to send an explicit, delayed acknowledgement messages to control when to send an acknowledgement message (Thompson – Fig. 10, 610 Queue Manager, 620 Packet Controller, par [0019] lines 18-24, i.e., delay issuance of the acknowledgment message until the contents (at the time the channel "failure" message was received) of the queue for the relevant channel have been transmitted), and it is old and well known in the art that the explicit delay **is inherent** "a predeterminable time period" by design. Also, Thompson teaches a traffic diversion to set up an alternate path when a failure occurs (Thompson – Fig. 10, 1-4 Queues, 610 Queue Manager, par [0020], i.e., queue manager is able to retrieve data packets and redistributes them on to another queue to ensure that the process entity will continue to receive any data packets destined to it) and it is old and well know in the art that traffic diversion is a must when a failure occurs in a highly redundancy/fault tolerant system.

It would have been obvious to a person of ordinary in the art at the time of the invention was made to apply a known technique to a known device (i.e., using the delayed acknowledgement of the failure message to ensure the data messages pending on the association are received at the remote process before the acknowledgement of the failure message) ready for improvement to yield predictable results (see KSR – MPEP 2143).

Therefore, it would have been obvious for one of ordinary skill in the art at the

time the invention was made to incorporate the explicit delayed acknowledgement

message and divert traffic, as taught by Thompson, into the method of Roque in order

to enhance the acknowledgement step when a failure occurs.

Regarding claims 4 and 5, Roque teaches a method wherein the transmission

and acknowledgment of a heartbeat message (par [0059], i.e., heartbeat message

SIGTRAN UA standard protocol runs over a transport layer) and wherein the controlling

comprises sending the acknowledgement of the failure message on the data stream

used for the data messages (Fig. 6, par [0355]).

However, Roque does not specifically disclose the delay. But, Thompson

teaches an explicit delayed acknowledgement messages (Thompson – Fig. 10, 610

Queue Manager, 620 Packet Controller, par [0019] lines 18-24, i.e., delay issuance of

the acknowledgment message until the contents (at the time the channel "failure"

message was received) of the queue for the relevant channel have been transmitted).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

of the invention was made to modify the delay time by using the time for transmission

and acknowledgement of a heartbeat message.

Regarding claims 6-8, Roque teaches a method comprising testing the

association to determine if the association is active and, if not, dropping messages

queued for the association (par [0058], i.e., leans on the status of the SCTP-

association); a plurality of associations between a plurality of local processes and a plurality of remote processes (Figs. 3-4, par [0065], and par [0071]); and informing other local processes of the fault so that such other local processes can avoid involving the failed association in traffic diversion procedures initiated by them (Figs. 13-14, par [0400},i.e., received "SG_INACTIVE/SG_DOWN", then such ASP will send a notification to all Signaling Gateway Processes (SGPs) connected to it).

Regarding claim 16, Roque teaches a method wherein the message indicating the fault is an ASP_INACTIVE or ASP_DOWN message (Fig. 6, 30.1, ASP-DOWN/ ASPIA "inactive", and ASPDOWN-ACK/ ASPIA-ACK) and the acknowledgement being respectively an ASP_INACTIVE_ACK message or an ASP_DOWN_ACK message (Fig. 6, 30.1, par [0047]-[0048], par [0052]-[0053], and [0330]-[0331]).

Regarding claims 17-19, Roque teaches a method comprising the initiating of a switch back procedure to include a new association linking a local process with a remote process (Figs. 15-16, par [0417]-[0423], i.e., ASP to change the status of a SG to "SG_ACTIVE"); informing other local processes of the new association so that such other local processes can begin involving the new association (Figs. 15-16, par [0417], i.e., send notification "SG active" to all SGPs); and wherein the associations are SCTP associations (Fig. 2, 109, Fig. 5, 129, par [0071] and par [0126], i.e., connections are made using SCTP as transport protocol "called in SIGTRAN's terminology SCTP-associations").

Regarding claims 20-21, Roque teaches a signaling gateway comprising a plurality of local processes that are controlled using a computer program code element (par [0068], i.e., logical entity that performs in both SG "signaling gateway" and AS "application server").

7.   Claims 9-12, and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roque in view of Thompson as applied to claims 1 and 7 above, and further in view of Performance Technologies – Tutorial: Interworking Switched Circuit and Voice-over-IP Networks, August 22, 2001, hereinafter "Performance".

Regarding claims 9-12 and 14-15, Roque teaches a method comprises determining the messages are TCAP messages and/or non TCAP messages (par [0009], i.e., SCCP, MAP, TCAP); and further comprising determining whether pending messages form part of a stateful or stateless transaction, and, if so, finding an alternative local process to provide an alternative path to the same remote process or to another remote process (par [0025], i.e., a set of User Adaptation (UA) layer "one per type of protocol to be transported", and par [0056] –[0057]), wherein the first processing entity is a signaling gateway (Fig. 5, 50 "SGP"), the local processes being signaling gateway processes having a common point code or set of point codes (Fig. 2, MTP3, Fig. 5, par [0009], i.e., MTP3 unique address for a node, and par [0016]), and wherein the second processing entity is an application server (Fig. 5, 60 "ASP"), the remote

processes being application server processes having a common routing key (Fig. 5, par

[0037 and par[0041], i.e., SIGTRAN routing key "RK").

However, Roque does not specifically disclose the stateful, stateless, and point

codes.

In the same field of endeavor, Performance teaches the method and system to

provide signaling in the Switched Circuit and VoIP networks that include the TCAP

signaling messages using the SCCP (Performance – page 4 second paragraph),

connectionless "stateless" and connection-oriented "stateful" transports with the

Signaling System 7 (SS7) messages are being routed to the SG based on point code

(Performance - page 11, paragraphs 2nd-4th). The stateless "connectionless" and

stateful "connection-oriented" terminologies are being equivalently used in SIP protocol

(Performance – page 12, paragraphs 5th-6th, also see

http://en.wikipedia.org/wiki/Connectionless_protocol).

Therefore, it would have been obvious for one of ordinary skill in the art at the

time the invention was made to incorporate the detail about stateless, stateful and point

code, as taught by Performance's tutorial, into the method of Roque in order to enhance

the transport of the Switched Circuit signaling messages.

8.   Claims 13, 22-29 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Roque in view of Thompson, and in view of Performance, and further in view of

Suzuki (U.S. Patent Publication 2002/0156925 A1).

        Regarding claim 13, Roque, Thompson and Performance disclose everything

claimed as applied above (see claims 1, 9-12, and 14-15). However, Roque, Thompson

and Performance do not specifically disclose wherein the traffic diversion comprises

modifying routing tables.

        In the same field of endeavor, Suzuki teaches a method and system of SS7

network with a Signaling Gateway (Suzuki - Fig. 1) that when a failure is occurred, find

an alternate path and modifying the routing table (Fig. 5, S14-S20, par [0060], i.e.,

detects a failure and determines destinations based on SLS, par [0063], i.e., creates the

routing table and sends it to the SGPs).

        Therefore, it would have been obvious for one of ordinary skill in the art at the

time the invention was made to incorporate the detail about modifying the routing table,

as taught by Suzuki, into the method of Roque, Thompson, and Performance in order to

enhance the transport of the Switched Circuit signaling messages.

        Regarding claims 22 and 29, Roque teaches a method of recovering failure in a

distributed signaling gateway maintaining a plurality of associations between signaling

gateway processes of said distributed signaling gateway and application server

processes of an application server (Fig. 1, 121-122 "Application Servers (ASs)", Fig. 1,

131-132 "Signaling Gateways (SGs)", par [0125]), said method comprising the steps of:

initiating a traffic diversion in response to a failure message to set up an alternate

path between said signaling gateway processes and said application server processes

in ease of fault affecting an association (Fig. 12 "SGPIA or SGPDOWN is received", par

[0350]-[0354], i.e., either use an alternate SGP that is active or start an activation

procedure).

initiating a switch back to include a new association linking a signaling gateway

process and an application server process (Figs. 15-16, par [0417]-[0423], i.e., ASP to

change the status of a SG to "SG_ACTIVE").

according to the change of status of any association, updating routing tables

capable of routing data messages received by said signaling gateway processes to its

destined application server processes (Figs. 6-12, par [0317]-[0321], i.e., SGP-A wants

to actively serve for traffic messages, then ASP-X will update the status of SGP, as well

as the routing information elements (RIE)); and

distributing sequentially messages from said signaling gateway to said plurality of

application server processes according to said routing tables, and said routing table are

SLS routing table (Figs. 6-12, par [0350]-[0354]).

However, Roque, Thompson and Performance do not specifically disclose in

detail about updating the SLS routing tables and distributing sequentially messages of

the failed signaling gateway.

In the same field of endeavor, Suzuki teaches a method and system of SS7

network with a Signaling Gateway (Suzuki - Fig. 1) that when a failure is occurred,

updates the routing table (Suzuki - Fig. 5, S14-S20, par [0060], i.e., detects a failure and

determines destinations based on SLS, par [0063], i.e., creates the routing table and

sends it to the SGPs), and distributing sequentially messages of the failed signaling

gateway (Suzuki - Fig.1, Fig. 5, par [0064], i.e., guarantee of an order of sending signal

since the SLS information included in the signals is not changed).

Therefore, it would have been obvious for one of ordinary skill in the art at the

time the invention was made to incorporate the detail about updating the SLS routing

table and distributing sequentially messages, as taught by Suzuki, into the method of

Roque, Thompson and Performance in order to enhance the transport of the Switched

Circuit signaling messages.

Regarding claims 23 -25, and 28, Roque teaches a method wherein said step of

initiating a traffic diversion and switch back further comprising the steps of:

starting a protection timer (par [0061] – lines 2-5, i.e., heartbeat time-out);

queuing messages destined for the application server process of the new

association (Fig. 12, par [0385], i.e., stop signaling traffic messages);

informing other signaling gateway processes (Fig. 13 - paragraph [0398], i.e.,

sending status notification to all SGPs connected to it);

finding alternate path/active signaling gateway to forward/divert subsequent

stateless/non-TCAP or stateful/TCAP processing messages onto another application

server process through another association or through an alternate signaling gateway

process still associated with the same application server process (Fig. 12 "SGPIA or

SGPDOWN is received", par [0350]-[0354], i.e., either use an alternate SGP that is

active or start an activation procedure), and TCAP and non-TCAP messages identified

by transaction identification numbers (par [0077]-[0078], i.e., message class "MC" and

message identifier "MI"); and

re-computing said routing tables (par [0404]-[0407], i.e., additional routing

information element);

Roque does not explicitly disclose controlling the acknowledgement, and the

stateful and stateless processing messages. However, Thompson teaches when

received a failure message (Thompson – Fig. 10, par [0019], lines 5-17, i.e., informs

"failure message" that no longer going to monitor a communication channel) and then to

send an explicit, delayed acknowledgement messages to control when to send an

acknowledgement message (Thompson – Fig. 10, 610 Queue Manager, 620 Packet

Controller, par [0019] lines 18-24, i.e., delay issuance of the acknowledgment message

until the contents (at the time the channel "failure" message was received) of the queue

for the relevant channel have been transmitted). Also, Thompson teaches a traffic

diversion to set up an alternate path when a failure occurs (Thompson – Fig. 10, 1-4

Queues, 610 Queue Manager, par [0020], i.e., queue manager is able to retrieve data

packets and redistributes them on to another queue to ensure that the process entity will continue to receive any data packets destined to it). Performance teaches the TCAP signaling messages using the SCCP (Performance – page 4 second paragraph), connectionless "stateless/non-TCAP" and connection-oriented "stateful/TCAP" transports with the Signaling System 7 (SS7) messages are being routed to the SG (Performance - page 11), and Suzuki teaches when a failure is occurred, updates the routing table (Fig. 5, S14-S20, par [0060], i.e., detects a failure and determines destinations based on SLS, par [0063], i.e., creates the routing table and sends it to the SGPs).

It would have been obvious to a person of ordinary in the art at the time of the invention was made to apply a known technique to a known device (i.e., using delayed acknowledgement message, stateless and stateful processing messages, and updating the routing table in routing signaling messages) ready for improvement to yield predictable results (see KSR – MPEP 2143). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to incorporate the detail about controlling the acknowledgement, stateless and stateful processing messages, and updating the routing table, as taught by Thompson, Performance and Suzuki, into the method of Roque in order to enhance the transport of the Switched Circuit signaling messages.

Regarding claims 26-27, Roque teaches the method wherein said signaling gateway is coupled to a signaling end point across a signaling system No. 7 network,

and wherein each signaling gateway process of said signaling gateway is coupled to

each application server process across an internet protocol network (Figs. 1-4, par

[0004]-[0011], i.e., PSTN, ISDN, IP networks with SGPs and ASPs with several

protocols via SS7 (e.g., Q.931, MTP, MTP3, etc.)).

Response to Arguments

9.   Applicant's arguments with respect to claims 1-29 have been considered but are

moot in view of the new ground(s) of rejection.

10.   Regarding the rejection of claims 20-21 under 35 U.S.C. 101, Applicants

arguments have been fully considered but they are not persuasive. As shown in the

rejection above, claim 20 recites "a computer readable storage medium embedded with

computer code", and claim 21 recites "- - - using a computer program code - - -". Claim

20 is drawn toward a computer readable storage medium, and claim 20 <u>failed to</u>

<u>describe that the program code is **executed** by a computer to perform the described</u>

<u>method</u>; as a result the medium is just code or instructions and therefore fails to fall

within a statutory category under § 101. In contrast, a claimed instructions <u>executed</u> by

a computer define structural and functional interrelationships between the instructions

and the computer software and hardware components which permit the instructions'

functionality to be realized, and is thus statutory.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHAI N. NGUYEN whose telephone number is (571)270-3141. The examiner can normally be reached on Monday - Thursday 6:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad F. Matar can be reached on (571) 272-7488. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. N. N./
Examiner, Art Unit 2614
05/04/2009

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Supervisory Patent Examiner, Art Unit 2614